

**TABLE 1**  
**POST-PAY RATES AND NET REVENUES PER MINUTE <sup>15</sup>**

	VZW		Cingular		Sprint		T-Mobile	
Included anytime minutes	900	6000	900	6000	1000	2000	600	5000
Monthly charge	\$60	\$200	\$60	\$200	\$56	\$100	\$40	\$130
Gross revenues per minute	\$0.15	\$0.03	\$0.15	\$0.03	\$0.056	\$0.05	\$0.15	\$0.026

Table 1 provides a summary of retail offerings of the four nationwide carriers. It includes monthly costs for an average consumer, who, according to the *Tenth Annual Report*, uses 584 minutes a month, and for the lowest per minute rate plan posted by each carrier.

Table 1 only presents gross revenues per minute. These gross revenues will necessarily provide a margin to recover customer acquisition costs, billing, and customer care. These are all costs that the nationwide operators must incur for retail subscribers that they do not incur for wholesale minutes.<sup>16</sup> Assuming \$350 customer acquisition

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<sup>15</sup> Cingular rates were obtained from <http://onlinestorez.cingular.com/cell-phone-service/wireless-phone-plans/cell-phone-plans.jsp;dsessionid=Q01BPSSECCR5TB4ROEUCFFA?pflow=a>; Verizon Wireless rates were obtained [http://www.verizonwireless.com/b2c/store/controller?item=planFirst&action=viewPlanDetail&sortOption=priceSort&catID=323&cm\\_re=Home%20Page-\\_-Personal%20Box-\\_-Individual%20Plans](http://www.verizonwireless.com/b2c/store/controller?item=planFirst&action=viewPlanDetail&sortOption=priceSort&catID=323&cm_re=Home%20Page-_-Personal%20Box-_-Individual%20Plans); Nextel rates are from [http://nextelonline.nextel.com/NASApp/onlinestore/en/Action/DisplayPlans?audience=INDIVIDUAL&id12=Personal\\_Wireless;Plans\\_Coverage&language=EN](http://nextelonline.nextel.com/NASApp/onlinestore/en/Action/DisplayPlans?audience=INDIVIDUAL&id12=Personal_Wireless;Plans_Coverage&language=EN); T-Mobile rates are from <http://www.t-mobile.com/plans/?tab=nationwide>.

<sup>16</sup> At 3% monthly churn amortized customer acquisition costs are over \$12 per month. Cf 11 above. Churn rates for Verizon Wireless were 1.3% in 3Q 2005 (see <http://investor.verizon.com/financial/quarterly/VZ/3Q2005/>), 2.3% for Cingular in 3Q 2005 (see <http://investor.verizon.com/financial/quarterly/VZ/3Q2005/>), 2.1% for post-paid and 4.9% for pre-paid subscribers for Sprint/Nextel during 3Q 2005 (see

costs, a 10% interest rate, and a 1.5% monthly churn rate, the amortized cost of churn means that an operator must incur almost \$8 per month for retail customer acquisition costs alone that the operator does not need to incur for wholesale minutes. Even for nationwide operators with churn as low as 1.5%, this means that, for an average consumer who uses 584 minutes per month, net revenues per minute must be at least 1.37¢ per minute less than average gross revenues, and almost 2¢ per minute if the churn is as high as 2.5%. Billing and customer support are additional costs of retail service that are not incurred for wholesale service.

Wholesale markets for CDMA and GSM roaming are only slightly less concentrated than the wholesale iDEN market in most regions. While Table 2 derived from the *Tenth Annual Report* shows the presence of five or more CMRS providers in counties covering over 87% of the U.S. population, the options for wholesale roaming for CDMA and GSM operators are more limited.

**TABLE 2**  
**MARKET ENTRY OVER TIME<sup>17</sup>**

Total Number of Providers in a County	Percent of Total US POPs Covered					
	Tenth Report	Ninth Report	Eighth Report	Seventh Report	Sixth Report	Fifth Report
1 or 2	3.10%	3.20%	5.30%	5.90%	9.20%	12.20%
3	3.70%	3.80%	5.40%	5.40%	6.40%	8.00%
4	5.90%	5.50%	6.70%	8.30%	9.30%	11.30%

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<http://www.sprint.com/investors/earnings/qe/3q05.pdf>) and 2.8% for T-Mobile during 2Q 2005 (see [http://www.t-mobile.com/company/investors/financial\\_releases/2005\\_Q2.pdf](http://www.t-mobile.com/company/investors/financial_releases/2005_Q2.pdf)).

<sup>17</sup> *Tenth Annual Report*, at 89, Appendix A, Table 9.

5	46.00%	11.70%	11.50%	27.30%	28.40%	33.90%
6	28.70%	46.30%	45.70%	31.90%	34.80%	30.20%
7 or more	12.60%	29.50%	25.40%	21.20%	11.90%	4.40%

Table 3 describes the market structure for wholesale roaming for CDMA, GSM and iDEN in the 50 largest BTAs. Table 3 differs from Table 2 in that it divides the set of potential suppliers for wholesale roaming into different markets for each CMRS technology. Within each technology, Table 3 provides a tally of the number of operators that currently have facilities and are using those facilities to serve end users.

In only two of the 50 BTAs are there three or more CDMA network operators and three or more GSM network operators. As is explained in more detail in the next section, these monopoly and duopoly providers of wholesale roaming have strong economic incentives, as well as the ability, to foreclose regional operators.

**TABLE 3**  
**WHOLESALE ROAMING MARKET STRUCTURE IN THE FIFTY LARGEST BTAs**

<b>Numbers of carriers in 50 largest BTAs using technology</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4+</b>
<b>GSM</b>	0%	94%	6%	0%
<b>CDMA</b>	0%	46%	36%	18%
<b>iDEN</b>	100%	0%	0%	0%

### **III. An Economic Analysis of Vertical Foreclosure in Wholesale CMRS Markets**

This section describes the economics behind the foreclosure incentives of the nationwide operators. To identify the foreclosure incentives of a nationwide operator with a monopoly in provision of wholesale roaming competing with a regional operator who is dependent on that nationwide operator for roaming, it suffices to consider a few factors.<sup>18</sup>

A nationwide carrier may have an incentive to increase roaming rates beyond not just the competitive level, but beyond the monopoly level, for two reasons. First, retail competition forces the nationwide carriers' retail rates to be far less than the monopoly level. But for a regional carrier's subscribers, the nationwide carrier can charge what the market will bear, and would raise the roaming rate to the monopoly level. A regional carrier has little bargaining power, since the value of roaming on the nationwide carrier's subscribers is modest. Second, the nationwide carrier hobbles the regional carrier by setting high roaming rates, thereby increasing the nationwide carrier's subscriber base. This effect tends to push the roaming rates even beyond monopoly prices and, in particular, well beyond the retail levels, which is consistent with the actual observed practice.

The potential loss of roaming revenues from higher roaming rates can, in theory, deter a nationwide operator from foreclosing the regional carrier, depending on the ability of the regional carrier to survive a refusal to deal. However, for potential lost roaming

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<sup>18</sup> One model that provides an analysis of foreclosure incentives in a similar situation is that of Chen and Riordan (2004). Their paper assumes duopolies in each of two markets (or regions). If one duopolist is integrated across the two regions, then it will want to integrate with the other duopolist in one market (region). See Yongmin Chen and Michael H. Riordan, *Vertical Integration, Exclusive Dealing, and Ex Post Cartelization*, 2004 available at <http://www.columbia.edu/~mhr21/Research.htm>.

revenues to limit roaming rates, it must be the case that there is some level of wholesale roaming rates for which the cost of decreased roaming use and roaming revenues from higher roaming rates offsets the benefits of increased market share in the non-roaming market. When retail prices are relatively high, the benefit from hobbling the regional carrier in the competition for new customers will tend to outweigh the benefit from roaming sales, and conversely.

Indeed, due to its limited footprint, a regional operator is unlikely to attract customers who roam a great deal. In addition, for an iDEN operator, the effect of increased competition is possibly quite significant; Nextel/Sprint maintains significantly higher revenues per subscriber than other CMRS carriers typically collect.<sup>19</sup> Offering roaming to a rival regional iDEN operator can result in reduced margins from iDEN service for Sprint/Nextel and Nextel Partners.

Even where there is a duopoly in the provision of wholesale roaming for a technology in a region, the same considerations will apply. Neither duopolist will want to be the first to offer wholesale roaming to regional operators. These foreclosure incentives have become stronger with consolidation of CMRS operators and are the reason why the Commission should intervene to mandate automatic roaming under just and reasonable terms.

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<sup>19</sup> Average revenues per subscriber or user ("ARPU") are reported in quarterly and annual financial statements for all the nationwide CMRS operators. Sprint/Nextel's are \$62 per subscriber <http://www.sprint.com/investors/earnings/qe/3q05.pdf>, Cingular reported ARPU of \$49.65 (<http://www.cingular.com/investors>), Verizonwireless reported ARPU of \$50.13 ([http://news.vzw.com/investor/pdf/Celco\\_10Q11.8.05.pdf](http://news.vzw.com/investor/pdf/Celco_10Q11.8.05.pdf)) and T-Mobile reported ARPU of \$54 ([http://www.t-mobile.com/company/investors/financial\\_releases/2005\\_Q2.pdf](http://www.t-mobile.com/company/investors/financial_releases/2005_Q2.pdf)).

#### **IV. Adverse Effects of Anti-Competitive Pricing for Roaming.**

The fact that wholesale markets for roaming services may not be at all competitive for many technologies in many regions does not always imply there is any need for regulatory intervention if the retail market is highly competitive. Limited competition in wholesale markets may not limit competition in downstream retail markets when there are many technologies with similar capabilities, and control of the networks is dispersed across a number of firms. The above-scenario does not describe today's CMRS market, though. There are only four nationwide firms operating a total of six digital networks - two of the firms operate multiple digital technology networks. In addition, the data indicate that there are on average about 4.5 facilities-based operators in the 50 largest BTAs. The lack of wholesale competition handicaps the regional firms and limits options available to consumers. Regional firms make a difference by offering new and innovative services, often unavailable from some or all of the nationwide operators and by often offering them earlier.

SouthernLINC Wireless competes with all CMRS operators for voice service, but primarily with Sprint/Nextel or Nextel Partners for dispatch service.<sup>20</sup> Two network features that SouthernLINC Wireless promotes are better coverage in rural areas and better reliability. SouthernLINC Wireless's network was the only network in the path of hurricanes Katrina and Rita to largely survive and was the first fully restored to service.<sup>21</sup> Given the fact that all other CMRS operators in a large fraction of the SouthernLINC

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<sup>20</sup> CDMA operators now provide a dispatch service, although it is reportedly has different call set-up features, and has not yet had much success. See [http://www.findarticles.com/p/articles/mi\\_m0GTV/is\\_5\\_22/ai\\_n13787936..](http://www.findarticles.com/p/articles/mi_m0GTV/is_5_22/ai_n13787936..)

<sup>21</sup> See SouthernLINC Comments at 22-23.

Wireless footprint suffered from significant disruptions during the past year due to hurricanes, it is not difficult to appreciate why SouthernLINC Wireless's service appeals to subscribers that want and need reliable service. In addition, SouthernLINC Wireless offers more extensive local coverage, which gives it another advantage in competing with the nationwide carriers.

Actual and potential customers of other regional operators using other technologies face similar dilemmas in other regions. For instance, at least two regional CDMA carriers, Leap Wireless and MetroPCS, offer unlimited local calling for a flat monthly rate of \$30 and will add unlimited long distance for \$40.<sup>22</sup> These carriers can manage customer accounts so that customers do not need to apply for credit. As a result, these carriers appeal to customers who could not otherwise afford or qualify for mobile phone service or even regular landline phone service. None of the nationwide carriers offers comparable plans. Both Leap and Metro have been hampered in their ability to provide roaming.

Another regional operator that had innovative offerings, and whose customers would benefit from more affordable roaming, is Western Wireless.<sup>23</sup> Western Wireless was the first wireless carrier to be designated an "Eligible Telecommunications Carrier" for receiving support from state public utility commissions and from the Federal State Joint Board on Universal Service.<sup>24</sup> These services benefit customers who would not otherwise have any wireline or wireless service; current policy toward roaming makes roaming unavailable or unaffordable for such customers.

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<sup>22</sup> See [www.cricketcommunications.com](http://www.cricketcommunications.com) and [www.metropcs.com](http://www.metropcs.com)

<sup>23</sup> Western Wireless was recently acquired by Alltel.

<sup>24</sup> <http://www.wwireless.com/PressRoom/30-Sep-1999.asp>

Consumers who obtain service from regional carriers, and those who currently do not because of limited roaming, would benefit from Commission enforcement of a mandatory automatic roaming requirement; SouthernLINC Wireless customers would not have to choose between reliable service and nationwide coverage, and customers of Leap, Metro, and other regional operators would be able to qualify for service that includes affordable roaming.

## **V. Conclusions and Recommendations**

Wholesale markets for CMRS roaming services are in many places monopolies or duopolies. The four nationwide carriers, who are the monopoly and duopoly wholesale providers, employ anti-competitive pricing policies, often charging wholesale per minute rates significantly more than they charge their own retail customers. These practices occur despite the fact that, on average, wholesale minutes are less costly for carriers to provide. Such practices are clearly carried out with the intent of restricting output and raising costs of unaffiliated regional competitors. Some consumers are harmed by these wholesale practices, as regional providers offer services, features, and rate plans not offered by the nationwide operators. Current wholesale pricing practices of the nationwide carriers make actual and potential customers of those regional carriers choose between those services and roaming.

This issue is a complex one, but the existence of retail competition provides a straightforward means of limiting the exercise of market power at the wholesale level. A nationwide CMRS carrier should not be permitted to set wholesale roaming rates in any region which exceed that carrier's lowest prevailing retail rates in that region. This type of regulatory intervention would be unnecessary if the regional operators could arbitrage



the retail-wholesale price differences, purchasing the minutes under retail pricing plans and reselling rather than relying on the wholesale markets. Unfortunately, CMRS technology does not allow such resale.

The Commission should also impose a requirement that any facilities-based operator in a region provide automatic roaming under just and reasonable conditions to all other carriers using compatible technology. The Commission also needs to enforce this requirement—except in the minority of regional wholesale markets where there are three or more facilities-based operators who can provide service compatible with a given technology; the Commission should not place the enforcement burden totally on costly, and drawn out, complaint processes which are inaccessible to all but very large carriers.

Together, these requirements represent a minimally intrusive way for the Commission to ensure that the nationwide carriers do not squeeze smaller or regional carriers. This proposed limit on wholesale rates would not require Commission audit of CMRS carrier rates, nor would the Commission need to obtain and analyze possibly confidential cost information. The information needed to enforce this requirement is available from the carrier's rates posted online and in their financial statements. A regional carrier being required to pay wholesale rates in excess of the providers' prevailing retail rates can easily provide verifiable information to the Commission.

These requirements also do not prevent the nationwide carriers from earning reasonable return from their investment in their networks. The requirement that the wholesale rates not exceed retail rates only limits the ability of nationwide carriers to exercise market power to earn excess returns and to undermine competition.

The data in Table 1 above shows how straightforward the calculation of rates should be. This data is all obtained from the carrier websites. The lowest per-minute costs from available retail rates range from \$0.026 for T-Mobile to \$0.05 for Sprint/Nextel. All include unlimited long-distance. While average revenue per minute from all customers may exceed these average rates, due in part to unused minutes or additional charges for extra minutes or features, these rates do indicate the prices that the nationwide carriers are voluntarily willing to offer. In the case of Sprint/Nextel, which has a "fair and flexible" plan, and Cingular, which allows "roll-over" minutes, the average rates and marginal rates are almost the same. To maximize yield, it is also optimal for the carriers to set marginal rates for the largest individual customers close to the marginal costs of the airtime. These marginal costs are what the carriers should be charging for wholesale rates and represent the opportunity cost of the capacity.

The requirement that wholesale rates not exceed retail rates does not ensure that wholesale rates will be set at socially optimal levels. However, implementation of the proposed cap would be a substantial improvement in the wholesale rates available to many regional carriers and would mitigate much of the harm of the current wholesale pricing practices without a significant regulatory burden.

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R. Preston McAfee is the J. Stanley Johnson Professor of Business Economics and Management at the California Institute of Technology. Professor McAfee's professional interests have focused on industrial organization, particularly with regard to antitrust, pricing, bidding and auction design, and the development of markets to improve the efficiency of procurement and administration in government and the private sector. He has authored more than sixty scholarly articles on these subjects and is author of *Competitive Solutions: The Strategist's Toolkit*, Princeton University Press. He has consulted extensively for firms and government agencies, both in the United States and abroad, on such matters as mergers, collusion, price-fixing, electricity pricing, auction design and bidding, and sales of government property. He has testified in federal district courts on antitrust and merger issues, and recently served as expert economist for the U.S. Department of Justice in *U.S. et al. v. Oracle* and for the Federal Trade Commission in the case of *Rambus, Inc.* He previously served as lead consultant to the FTC in the Commission's investigations of mergers between Exxon/Mobil and BP Amoco/ARCO, and in the Midwest Gasoline Price investigations. He previously served as Co-Editor of the *American Economic Review*, the preeminent economics journal, and currently is an Associate Editor of that journal and the *Journal of Economic Theory*. He is a Fellow of the Econometric Society. His areas of expertise include:

- Matters involving antitrust liability and damages, including monopolization claims, bundling and tying, vertical restrictions, and price fixing;
- Antitrust analyses including market definition and class certification;
- Studies of horizontal and vertical mergers to determine whether they would lead to the exercise of market power;
- Auction design and bidder support. Markets examined include microwave and PCS spectrum, mineral rights, and electric power;
- Privatization of government supplied-goods and services; and
- Applications of game theory in business strategy.

Professor McAfee received Ph.D. and M.S. degrees in economics and a M.S. degree in mathematics from Purdue University, and his B.A. in economics is from the University of Florida.

## SELECTED CASEWORK

### UNITED STATES DISTRICT COURT, NORTHERN DISTRICT OF CALIFORNIA SAN FRANCISCO DIVISION

*United States of America, et al. v. Oracle Corporation*

Lead consultant to U.S. Department of Justice. Prepared expert report and rebuttal report, and provided deposition and court testimony analyzing the likely competitive effects of Oracle's proposed acquisition of PeopleSoft, 2003-2004.

### UNITED STATES DISTRICT COURT, FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

*D. Lamar DeLoach, et al. v. Philip Morris Companies, Inc., et al.*

Prepared expert report and provided deposition testimony evaluating claims that major cigarette companies and leaf buyers engaged in a price-fixing agreement, 2003-2004.

### FEDERAL TRADE COMMISSION

*In the Matter of Rambus Inc.*

Lead consultant to Federal Trade Commission. Prepared expert report and rebuttal report, and provided deposition and court testimony analyzing the competitive effects of Rambus's actions, 2003.

### SUPERIOR COURT OF THE STATE OF CALIFORNIA, FOR THE COUNTY OF LOS ANGELES

*Alan Wayne et al. v. BP Oil Supply Company, No. BC244334.*

Economic analysis of petroleum prices, 2002.

### FEDERAL TRADE COMMISSION

*TMP Worldwide, Inc.'s (parent of Monster.com) proposed acquisition of HotJobs, Inc.*

Consultant to Federal Trade Commission. Economic analysis of the competitive effects of the proposed merger, 2001-2002.

### UNITED STATES DISTRICT COURT, NORTHERN DISTRICT OF OHIO

*RE/MAX International, Inc., et al. v. Realty One, Inc., et al.*

Prepared expert report and provided court testimony regarding economic analysis of price-fixing claims, 2000.

#### FEDERAL TRADE COMMISSION

*Exxon Corporation's proposed acquisition of Mobil Corporation.*

Lead consultant to Federal Trade Commission. Economic analysis of the competitive effects of the proposed merger, 1999-2000.

#### FEDERAL TRADE COMMISSION

*British Petroleum Corporation's proposed acquisition of Atlantic Richfield Corporation.*

Lead consultant to Federal Trade Commission. Prepared expert report analyzing the competitive effects of the proposed merger, 1999-2000.

#### TEXAS STATE DISTRICT COURT, TRAVIS COUNTY, TEXAS

*BMC Software, Inc. v. Peregrine/Bridge Transfer Corp., Skunkware, Inc, NEON Systems, Inc. Wayne E. Fisher, and John J. Moores v BMC Software BMC Software, Inc. and Max P. Watson.*

Prepared expert report and provided deposition testimony regarding product tying and predatory pricing claims, and analysis of damage claims, 1999.

#### FEDERAL ENERGY REGULATORY COMMISSION

*Natural Regulation of Short-Term Gas Transportation Services, Docket No. RM98-10; Regulation of Interstate Natural Gas Transportation Services, Docket No. RM98-12.*

Filed expert report with the Federal Energy Regulatory Commission analyzing the proposed auction of pipeline capacity, 1999.

#### FEDERAL COMMUNICATIONS COMMISSION

*Implementation of Section 309(j) of the Communications Act Competitive Bidding, PP Docket No. 93-253.*

Filed expert report with the Federal Communications Commission on auction design for the sale of spectrum license rights for wireless communications, 1993-1994.

#### UNITED STATES DISTRICT COURT, DISTRICT OF CONNECTICUT

*Great Northern Nekoosa Corporation v. Georgia-Pacific Corporation et al.*

Deposition and court testimony regarding economic analysis of the proposed acquisition, 1989-1990.

#### JOURNAL ARTICLES

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What is a Barrier to Entry?, *American Economic Review Paper and Proceedings*, forthcoming (with Hugo Mialon and Michael Williams).

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## BOOKS

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## BOOK CHAPTERS

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## BOOK REVIEW

*The Economics of Conformism*, by Stephen Jones, reviewed for *The Canadian Journal of Economics*, February 1986.

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## ACADEMIC EXPERIENCE

*J. Stanley Johnson Professor*, California Institute of Technology, 2004-

Visiting Professor of Business Strategy, University of Chicago GSB, 2000-2001

*Murray S. Johnson Chair*, University of Texas at Austin, 1997-2003

Chair, Department of Economics, University of Texas at Austin, 1997-1998

*Rex G. Baker, Jr.*, Professor of Political Economy, University of Texas at Austin, 1990-1997

Visiting Professor of Economics, Massachusetts Institute of Technology, 1994-1995

Professor of Economics, University of Western Ontario, 1989-1990

Visiting Professor of Economics, California Institute of Technology, 1989-1990

Visiting Associate Professor of Economics, California Institute of Technology, 1988-1989

Associate Professor of Economics, University of Western Ontario, 1987-1989

Assistant Professor of Economics, University of Western Ontario, 1981-1987

Visiting Assistant Professor of Economics, Purdue University, 1980-1981

## **EDITORIAL DUTIES**

Co-Editor, *American Economic Review*, 1993-

Organized AEA session in honor of William Vickrey, 1992

Associate Editor, *American Economic Review*, 1992-1993

Associate Editor, *Journal of Economic Theory*, 1992-1996

Member of AEA, Society for the Promotion of Economic Theory, and Associate of American Bar Association

## **OTHER PROFESSIONAL ACTIVITIES**

Market Design Inc., Vice-President and Treasurer

Colin Clark Lecture, Australasian Econometric Society Meetings, 1998

John S. Day Distinguished Alumni Award, Purdue's Krannert School of Management, 1997

Fellow (1995) and Member of the Econometric Society

Member of American Economic Association, Society for the Promotion of Economic Theory, and Associate of American Bar Association

**ATTACHMENT C**

**“The Little Company that Could”**

**USA Today, October 9, 2005**



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## The little company that could

By Dennis Cauchon, USA TODAY

GULFPORT, Miss. — Melvin Wilson, 46, a marketing manager for Mississippi Power, was reviewing next year's advertising campaign when Hurricane Katrina turned toward Mississippi.



Brian Kalb of Baltimore works to repair an electrical line for Mississippi Power.

By H. Darr Beiser, USA TODAY

A day later, the marketing man was "director of storm logistics," responsible for feeding and housing 11,000 repairmen from 24 states and Canada. (Photo gallery: [Power struggle in Mississippi](#))

He needed nurses, beds, meals, tetanus shots, laundry service, showers, toilets and much more — and he needed them now. And he needed double the quantities called for in the company's "worst-case scenario." And he needed them in places that had no electricity, no plumbing, no phones, few road signs and sporadic looting.

### About Mississippi Power

Headquarters: Gulfport, Miss.  
 Employees: 1,250  
 Customers: 195,000  
 2004 revenue: \$910 million  
 2004 net income: \$77 million  
 Parent company: Southern Co. of Atlanta  
 Mississippi Power's damage from Hurricane Katrina  
 Repair costs: \$245 million to \$295 million  
 Customers without power: 100%  
 Transmission and distribution facilities lost: 65%  
 Generating capacity available: 3%  
 Power lines: 1,000 miles down  
 Poles: 8,900 down  
 Transmission towers: 300 damaged  
 Corporate headquarters: Unusable for months  
 Employees: All survived. More than half suffered substantial damage to their homes; 75 lost homes completely.

Sources: Mississippi Power, Southern Co.

The fact that Wilson didn't have a working phone was his tough luck: If he failed, men would go hungry, hospitals would stay dark and the suffering of his community would endure. "My day job did not prepare me for this," says Wilson, his voice choked

with emotion, recalling the burden of having 11,000 mouths to feed.

Let it be told: Wilson got the job done. So did his colleagues. And how they restored power in just 12 days is one of the great modern crisis-management stories.

While the government struggled to organize a bus convoy in New Orleans, Mississippi Power successfully

executed a swift, ambitious disaster plan. The company provided its own security, communications, fuel, food and sanitation. The manpower deployed was equal in size to an Army division.

The story of this relatively small 1,250-employee corporate subsidiary reveals how much can be done quickly when it's managed right. "I could not be prouder of our response," says David Ratcliffe, chief executive of Southern Co. (SO), the Atlanta-based utility that owns Mississippi Power.

Operating in the harshest of circumstances — its corporate headquarters destroyed, its disaster response center flooded, all 195,000 customers without power — Mississippi Power restored power to all customers who could safely take electricity by the symbolic day of Sept. 11. The 12-day repair effort was completed far ahead of the original four-week schedule.

Mississippi Power benefited from a strategy refined by years of hurricane experience. Southern Co.'s five electric companies — all located in hurricane-prone southeastern states — work together during storms and share lessons afterward.

When Katrina hit, Mississippi Power management responded with a style designed for speed and flexibility, for getting things done amid confusion and chaos.

The key elements to success:

#### **A can-do corporate culture.**

Southern Co.'s corporate values are written on employees' IDs: Unquestionable Trust, Superior Performance, Total Commitment. These simple rules, called Southern Style, went from platitude to practice during the crisis. For example, "unquestionable trust" made second-guessing a corporate no-no.

Mississippi Power also had steeped its culture in Stephen Covey's *The 7 Habits of Highly Effective People*. The company's training building, the Covey Center, flooded during the storm. But Covey-speak — "win-win," "be proactive," etc. — survived as a lubricant to quick action and on-the-spot innovation.

#### **Clear lines of responsibility.**

In contrast to the government's disaster response, Mississippi Power made absolutely clear who had responsibility and authority for each task. Long before the storm, the company had 20 "storm directors" with crystal-clear assignments: transmission lines, logistics, security, etc. Those responsible could not hide in a bureaucracy.

The man responsible for procuring 140,000 gallons of fuel a day in a time of extreme shortages? That's him, the man in the baseball cap, Rufus Smith, storm director for the supply chain. Smith and other directors had broad power backed by "unquestionable trust" from their superiors. "I don't have to ask permission," says Wilson. "If I need 2,000 cots and find some, I say, 'Roll the trucks.'"

#### **Decentralized decision-making.**

Twenty years ago, hurricane response was run from the top down: Top executives looked at the power system holistically and set priorities from headquarters. Today, decision-making has been pushed far down the command structure, to the level of the electrical substation, a distribution point that serves perhaps 5,000 people. Crews report to substations with broad authority and a simple mission: Get the power on.

Even out-of-state line crews, hired on contract and working unsupervised, were empowered to engineer their own solutions. The results were entrepreneurial. One crew chief stripped a generator off an ice machine to get a substation working. Other crews scavenged parts from fallen poles. Costly purchases were made instantly over the phone.

The strategy worked even better than top management expected. "We had greater storm damage than originally thought, but this structure made things happen faster than we expected. People were getting more done," says Mississippi Power President Anthony Topazi.



Company procedures were less important than the ability to improvise.

*Mississippi Power's hurricane response manual is 4 inches thick. When Katrina struck, the manual played its traditional role: none. "I haven't looked at in years," admits Robert Powell, storm director for damage assessment and a 35-year company veteran. "If you don't know what you're supposed to do, the manual is not going to help now."*

The most valuable document was a phone directory: the names and numbers of people who could get things done.

#### **Lesson 1: Think ahead — A good forecast pays off**

**Robert Powell, a power line project manager, is the company's weatherman when a hurricane threatens.** Mississippi Power subscribes to three weather-forecasting services. As the storm approached, Powell talked to meteorologists and examined computer projections. The engineer and self-taught weather expert bet correctly that Coastal Weather Research Center at the University of South Alabama had the most accurate forecast. "They've had the hot hand this year predicting storm paths," Powell says.

Powell told storm directors that Hurricane Katrina could slice a diagonal path through the heart of Mississippi Power's 23-county service area and cause more flooding than official forecasts.

"The computer models don't take into account a quirk in geography that affects our territory," he says. The quirk: Boot-shaped Louisiana sticks out underneath part of Mississippi. "Louisiana acted like a dam, pushing water into Mississippi and creating a storm surge that was twice what the models predicted," he says.

With Powell's assessment in hand and the storm 24 hours away, the company retreated from its primary storm center in its high-rise headquarters on the beach in Gulfport to a backup office at a power plant about five miles inland.

Hurricane Katrina officially landed at 6:10 a.m. Aug. 29.

At noon, the backup storm command center lost power. The giant power plant shut down. A flooded power plant was not in the plan. The company's storm directors, holding flashlights, walked downstairs to look out a small window in a metal door. Cars were floating in the parking lot.

Powell radioed his wife, an officer in the National Guard, that he was OK. He wouldn't speak to her again for six days. "This was more than our worst-case scenario," he says.

Repair trucks were rolling in from out of state as the hurricane pounded Mississippi.

Mississippi Power had pre-positioned 2,400 workers, mostly contract tree trimmers and line crews, in Alabama and Georgia. Combined with its own workforce, Mississippi Power had a force of 3,700 on the ground one day after the hurricane.

Southern Co. procedure called for each subsidiary to run the show on its home turf.

Mississippi Power is a small utility — one-tenth the size of Georgia Power, one-sixth the size of Alabama Power. The company's worst-case scenarios had considered that every customer could lose power, which happened. But the company didn't think it was big enough to manage an outside repair force of more than 5,000, the number prepared for in the worst-case scenario. "We have never, in our little company's history, used more than 4,000 from outside," says Topazl.

The problem wasn't resources. Southern Co. had net income of \$1.5 billion in 2004 and resources to spare.

It was all about managing. And that was Mississippi Power's problem.

#### **Lesson 2: Be prepared — Back up your backup plans**